THE STATE OF WYOMING

ED HERSCHLER
GOVERNOR

*Department of Environmental Quality*

*Water Quality Division*

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MEMORANDUM

TO: Water Quality Engineers

THROUGH: Larry Robinson, Engineering Supervisor LR

FROM: Susan Fields, SF Environmental Engineer, Sheridan Office

DATE: August 26, 1986

SUBJECT: Approval of "Insituform" for Potable Water Main Rehabilitation

The City of Sheridan recently approached the Water Quality Division for approval to use "Insituform" to repair a 1100 foot section of their raw water transmission main. Based on a review of literature and discussions with installation personnel, the Division grants approval to use this material for rehabilitation of potable water mains in the State of Wyoming.

The "Insituform" process is a means of installing a liner system into a pipeline with minimal disruption of service and virtually no ground disturbance. Historically, the material has been used to repair sewer mains, but recent advancements in the epoxy resin impregnation material has expanded its application to pressure pipelines.

The repair process involves the use of a pliable felt tube that is impregnated with a thermosetting epoxy resin. One side of the tube is lined with a polyurethane membrane that will become the inside of the repaired pipe. The tube is lowered into the pipe, inside out, via an inversion riser and the leading end attached to the damaged pipe. The inversion riser is filled with water and the hydraulic head pushes the felt tube through the pipeline, inverting the tube such that the impregnated felt is pressed firmly against the damaged pipe. The water in the tube is then heated and the epoxy resin cures, bonding to the pipe and forming a hard internal lining. Of particular interest is that the water used in the installation process is never in contact with the resins themselves. The polyurethane membrane provides a barrier for contact at all times during the process.

Disposal of the process water is a concern, however, because it is heated and will contain high chlorine concentrations from the disinfection procedure. In the Sheridan application, it is expected that the water will simply be released to flow to the water treatment plant, provided there are no taps between the point of work and the plant.

The epoxy resins, once cured, become an inert material that is very resistant to chemical attack and abrasion. Testing results of the material's reaction with potable water are available from the Sheridan office. The testing shows that no components of the resin materials are transmitted to the water above the 10 ppb detection limit.

"Insituform" has been approved for use in potable water mains in Utah, New York, Texas and Michigan. The EPA is currently reviewing this application and is expected to make a statement in the near future.

Attached is a brief (publication) not included on the process. Design information and case histories are available in the Sheridan office if you would like more specific information.

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